PACIFIC PROPANE GAS ASSOCIATION

October 14, 2022

Washington State Building Code Council
1500 Jefferson Street SE
P.O. Box 41449
Olympia, Washington 98504

RE: PPGA Comments on 062_Section R403.6_IRC and Residential Energy Code Proposals 21-GP2-065: Heat Pump Space Heating and 21-GP2-066: Heat Pump Water Heating (Energy Code)

Dear Members of the Washington State Building Code Council:

On behalf of the Pacific Propane Gas Association (PPGA), which represents propane marketers, suppliers and equipment manufacturers across Washington State, we appreciate the opportunity to provide feedback on propane in general and explain our opposition to these proposals (21-GP2-065 and 21-GP2-066). Our members provide clean-burning and critical energy to residential, commercial and agricultural customers in the state. Washington's propane industry generates more than $658 million in economic activity annually.[1]

## General Comments

### I. Clean American Energy

Propane can play an important role in Washington's clean energy transition and future. It can help the state achieve many of its near- and long-term environmental and climate health goals. Propane burns cleanly, efficiently and has a low-carbon content.[2] As a less carbon intensive fuel, the state could achieve immediate greenhouse gas (GHG) reductions in the thermal sector if more consumers simply replaced their antiquated fuel oil, kerosene or coal heating systems with efficient propane equipment. These emission reductions are harmonious with the underlying intentions of the Washington State Building Code Council proposals and, importantly, would be consumer-driven.

Propane's environmentally friendly attributes have long been recognized by the federal government and states around the country. It is nontoxic and vaporizes the moment it is released from a pressurized cylinder. As such, and unlike other energy sources, propane presents no threat to soil, surface water or ground water.[3] This helps preserve and protect Washington's critical

[1] https://www.npga.org/wp-content/uploads/2020/07/WASHINGTON_Propane-1-Pager_2020-3.pdf
[2] https://www.eia.gov/environment/emissions/co2_vol_mass.php
[3] https://afdc.energy.gov/fuels/propane_basics.html

land and water resources, including our environmentally sensitive waterways. In addition to protecting natural resources from contamination, propane can also prevent their destruction. For example, more than 107,000 households in our state still burn wood to keep warm.[4] This, despite the fact that wood smoke contains high levels of particulate matter that can negatively affect our respiratory and cardiovascular systems and degrades local air quality.[5] By comparison, propane's combustion produces virtually zero particulate matter.[6] For residents living beyond the natural gas distribution system, using propane instead of firewood protects trees, which are natural carbon sinks, prevents deforestation and a reduction in woody habitat for plants and animals. This is beneficial from not only from a human health and air quality perspective, but an ecological one as well.

Earlier this year, the Governor signed legislation to reduce methane emissions from municipal solid waste landfills.[7] It is smart to focus on these fugitive emissions because methane is an extremely potent GHG and its 20-year global warming potential (GWP) is 82 times more powerful than carbon dioxide; its 100-year GWP is 29 times more powerful.[8] Propane, however, is a non-methane energy molecule. So, it is truly clean both before and after combustion.

## II. Renewable Propane

Beyond conventional propane, the industry is also actively promoting the use of renewable propane as another means to reduce GHG emissions. Renewable propane is a by-product of renewable diesel production, and can be derived from a variety of sustainable sources, such as biomass, animal fats and vegetable oils.[9] And, in addition to retaining all of the same environmentally friendly attributes as traditional propane, it is less carbon intensive.[10] In California, renewable propane being used as a vehicle fuel has a carbon intensity score as low as 20.5, far less than other energy sources.[11]

Beyond transportation, energy molecules produced from sustainable feedstocks, like renewable propane, can also drastically reduce GHG emissions from the buildings and thermal sectors as well.

Additionally, new technologies continue to be developed such as the blending of renewable Dimethyl Ether (rDME) and propane. An 80% rDME and 20% conventional propane blend achieves a near zero carbon intensity score. As an industry, with continued investments we believe propane can get to zero or near zero carbon intensity.

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[4] https://data.census.gov/cedsci/table?q=home%20heating%20fuel&g=0400000US53&tid=ACSDT5Y2020.B25040
[5] https://dec.vermont.gov/air-quality/compliance/owb/health-and-environment
[6] https://www.epa.gov/sites/default/files/2020-09/documents/emission_factor_documentation_for_ap42_section_1.5_liquified_petroleum_gas.pdf
[7] https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/House%20Passed%20Legislature/1663-S2.PL.pdf?q=20220622062701
[8] https://www.epa.gov/ghgemissions/understanding-global-warming-potentials#Learn%20why

[9] https://afdc.energy.gov/fuels/propane_production.html
[10] https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0189_summary.pdf
[11] *Id.*

Renewable propane is already in the marketplace in California and Oregon, supporting those states decarbonization efforts. Limiting these technological advancements in Washington, through building codes, limits the state's ability to decarbonize its economy and still remain an attractive place for business and investment.

## III. Zero Net Energy Buildings and Propane.

Importantly, buildings can currently be built with propane infrastructure and still achieve Zero Net Energy (ZNE) construction status. By constructing buildings in an extremely energy efficient manner (e.g., minimal air loss, robust insulation), utilizing efficient appliances, and generating electricity onsite from solar or wind, buildings can still achieve ZNE status while also using propane for energy intensive applications, such as space and water heating. ZNE residential homes are currently being built in California using an "all of the above" energy approach that includes the use of propane. These same technologies can be applied to the residential market in Washington.

## IV. Direct Use

Washingtonians have long relied on propane for space and water heating, fireplaces, cooking and clothes drying. And the direct use of propane is clean and efficient way to consume energy. It is important to remember that electricity, unlike propane, is a secondary energy source that must first be created. Grid electricity is extremely inefficient and energy is lost during each step of the production and delivery process. Although the majority of electricity produced in our state comes from hydropower, fossil fuels – coal, natural gas and petroleum – are the second most relied upon source for electric power generation.[12] The efficiency of a typical natural gas plant is only 44 percent; the efficiency of a coal-fired power plant is a paltry 32 percent.'[13] Following power generation, additional energy is lost during the transmission and distribution of that electricity to an outlet for an end-use purpose.[14] These inherent inefficiencies mean that more GHGs, as well as air pollutants, are released. For context, the federal government's Energy Star Program gives propane a source-site ratio of 1.01, compared to 2.80 for electricity from the grid.[15] This means is takes 2.80 units of electricity to produce and deliver one unit of energy to a home, compared to only 1.01 for propane. Propane is much more efficient at delivering energy than drawing electricity from the grid. Utilizing a full fuel-cycle analysis, it is clear that the direct use of propane is a clean and climate friendly way to consume energy. And notably, our industry continues to deploy cleaner and more efficient products, including tankless water heaters that use considerably less energy than traditional storage units, and micro cogeneration systems that produce electricity and useful thermal energy simultaneously to achieve maximum efficiency.

## V. Energy Reliability & Resilience

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[12] https://www.eia.gov/electricity/data/browser/#/topic/0?agg=2,0,1&fuel=vtvv&geo=000000000001&sec=008&linechart=ELEC.GEN.ALL-WA-98.A&columnchart=ELEC.GEN.ALL-WA-98.A&map=ELEC.GEN.ALL-WA-98.A&freq=A&start=2020&end=2021&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=

[13] https://www.eia.gov/electricity/annual/html/epa_08_01.html

[14] https://www.eia.gov/tools/faqs/faq.php?id=105&t=3

[15] https://portfoliomanager.energystar.gov/pdf/reference/Source%20Energy.pdf

American propane production is at record levels.[16] As a result, clean and reliable domestic energy is readily available to consumers. Propane can easily and economically by transported multiple ways, including by pipeline, rail, ship and over-the-road vehicles. Electricity generated at power plants, in contrast, has only one transportation option: electric utility lines. Like all other states, Washington has its share of power outages and system failures. Using propane for energy intensive applications, such as space and water heater, reduces stress on the electric grid and helps it cope with peak demand.

While Washington relies heavily on hydroelectric power to generate electricity, it is important to remember that reduced precipitation and drought conditions can lower water levels in reservoirs and decrease the amount of energy these power plants can produce.[17] When this occurs, grid operators have to secure power from other sources. And with drought conditions widespread across large swaths of the West, we are already seeing this process play out.[18] This is yet another example of the tremendous resilience value in energy diversity. In addition to electrons generate from cleaner sources, Washington also needs low-carbon and clean energy molecules, like propane, to increase energy reliability and the overall resilience of the energy sector.

## Proposal Specific Comments

### 062_Section R403.6_IRC

This proposal to modify Table M1505.4.1(1) and introduce new requirements for kitchen range hood ventilation rates and capture efficiency is premature in the sense that there is no information provided on how the airflow rates in proposed Table M1505.4.4.3.2 were arrived at. The air flow rates and capture efficiencies proposed do not appear in the 2022 edition of ASHRAE 62.2 or any other cited reference that we could find.

In addition, there is a reference to ASHRAE 62.2 proposed for Chapter 15 but there is no actual mention of that standard in the proposed code text. Due to the seemingly arbitrary approach to specifying kitchen range hood ventilation rates and capture efficiencies, **we urge the Washington State Building Code Council to reject these proposed changes.**

The PPGA opposes energy code proposals 21-GP2-065 and 21-GP2-066 for the below reasons:

### I. Elimination of Consumer Choice

The PPGA believes consumer choice for the energy products they want and decarbonization of the residential building sector can co-exist instead of forcing a one size fits all approach. As stated above, a building can be built to meet ZNE standards while allowing consumers to choose propane for space and water heating. These proposals fail to acknowledge that fact by eliminating the choice of highly efficient and cost-effective gas options and prescriptively mandating only one energy source. Mandating one energy source will add cost to consumers as heat pumps are considerably more expensive than highly efficient gas options.

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[16] https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M_EPLLPA_FPF_NUS_MBBL&f=M
[17] https://www.drought.gov/sectors/energy
[18] *Id.*

While this policy will negatively impact all residential customers, it will disproportionally impact small and rural Washingtonians that have disproportionally been impacted by the COVID-19 pandemic. Many rural communities in Washington already struggle with economic development and putting costly and unnecessary regulatory burdens on these Washington families is the wrong approach.

## II. Rural Washington

Propane provides a critical role in rural Washington. The PPGA is concerned about the applicability of electric heat pumps in certain areas of Washington and the higher cost of electrification of rural Washington. Heat pumps lose efficiency as temperatures get colder and cost more to install. This is particularly concerning in colder areas in Washington. Washingtonians rely on propane is these areas because they are confident in its reliability to provide space and water heating during the coldest temperatures.

## III. Eliminates Decarbonation Innovations in other Sectors

Mandating one fuel source and accepting the premise that there is no future for other fuel sources will limit investments and innovation in decarbonization efforts by current participants in the energy markets. The propane industry has little incentive to invest in new technologies or decarbonization projects—outlined above—if the State decides we have no future in Washington's energy marketplace. Of the propane consumed in Washington, 48 percent is used for residential purposes—primarily space and water heating. Not being allowed to participate in the future residential buildings market would surely end efforts to bring renewable propane and other innovations into Washington. If the assumptions of electrification faulter at any point then critical opportunities to decarbonize other energy sectors may have been lost because those sectors did not feel those investments were worth making in Washington.

## IV. Picking Winners and Losers

Most propane retailers operating in Washington are small family-owned businesses. These proposals essentially say these families and businesses have no place in Washington's future. The State Building Code Council should not be in the business of putting certain industries out of business. Our members provide good paying jobs to many Washingtonians and are a critical part of their local community.

## V. Increased Costs for Consumers

21-GP1-179 specifically will result in increased design and construction costs for multi-family buildings and their associated energy infrastructure while resulting in no meaningful emission reductions. Washington already has an affordable housing problem and this proposal will only make the cost of living more expensive for average residents.

## VI. Legislative Prerogative

The PPGA has concerns about the State Building Code Council making such a wholesale change to the Washington economy without the proper input from the Washington Legislature and Governor. Under Article II of the Washington Constitution, "the legislative authority of the state of Washington shall be vested in the legislature, consisting of a senate and house of representatives, which shall be called the legislature of the state of Washington. . ."

Furthermore, the Washington Legislature has declared that "it is the policy of the state to:

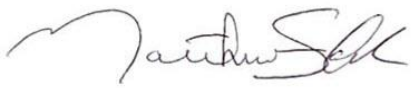
1. Preserve affordable energy services to the residents of the state;
2. Maintain and advance the efficiency and availability of energy services to the residents of the state of Washington;
3. Ensure that customers pay only reasonable charges for energy services;
4. Permit flexible pricing of energy services."

By eliminating choice and competition in the energy marketplace there are serious concerns whether these policies can be achieved. Forcing a one size fits all energy system at great conversion costs to consumers does not result in affordability, availability, reliability and efficiency.

Finally, the Legislature itself has implied this is an area within their jurisdiction. In 2021, legislation was introduced that would have made wide-ranging changes to the State Energy Code on the use of gas in residential and commercial buildings. This legislation had hearings, was debated, and received a vote in a House Legislative Committee. The PPGA questions why the State Building Code Council is now usurping authority from the Washington Legislature on an issue the Legislature clearly believes is in their prevue.

Thank you for allowing us to share some information about propane and the impact these proposals would have on our members and their customers. The PPGA asks you to protect consumer choice, support small businesses, and promoting a robust energy marketplace by rejecting these residential energy code proposals.

Sincerely,



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